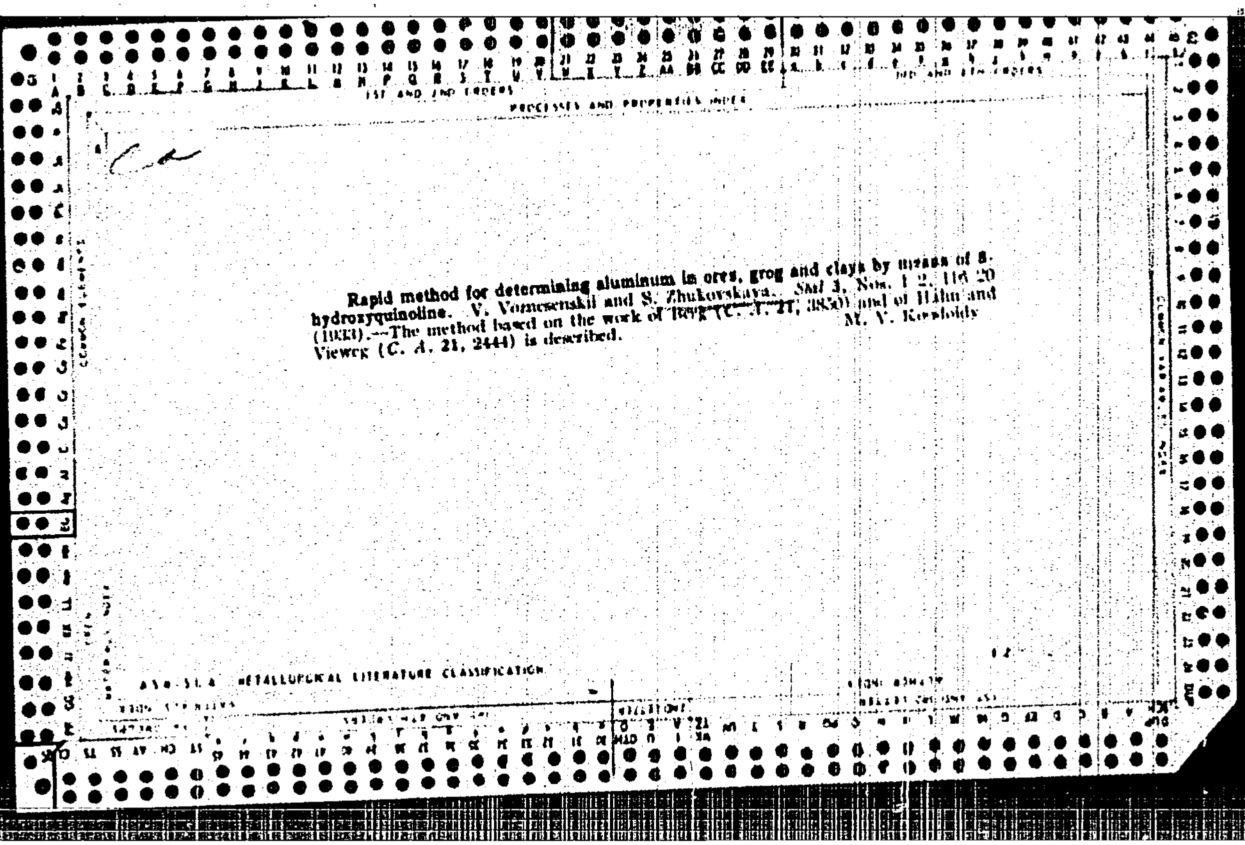

1ST AND 2ND ORDERS

PROCESSES AND PROPERTIES INDEX

3RD AND 4TH ORDERS

Rapid method for determining aluminum in ores, grog and clays by means of 8-hydroxyquinoline. V. Vomesenskii and S. Zhukovskaya. Stal 3, Nos. 1-2, 116-20 (1933).—The method based on the work of Berg (C. A. 21, 3850) and of Hahn and Vieweg (C. A. 21, 2444) is described. M. V. Kosloidy

ASM-SLA METALLURGICAL LITERATURE CLASSIFICATION

BOYKO, I.D.; ZHUKOVSKAYA, S.A.; ANNENKOVA, L.A.

Investigation of the aeration process in aeration installations. 1. Aeration by means of mechanical mixers and bublers. Med. prom. 14 no.9:36-41 S '60. (MIRA 13:9)

1. Vsesoyuznyy nauchno-issledovatel'skiy institut antibiotikov.
(DRUG INDUSTRY--EQUIPMENT AND SUPPLIES)
(OXYGEN--INDUSTRIAL APPLICATIONS)
(ANTIBIOTICS)

ANNENKOVA, L.A.; BOYKO, I.D.; ZHUKOVSKAYA, S.A.

Extraction of terramycin from native solutions with the use of a jet extractor. Med. prom. 15 no.11:43-45 N '61. (MIRA 15:6)

1. Vsesoyuznyy nauchno-issledovatel'skiy institut antibiotikov.
(TERRAMYCIN)

BOYKO, I.D.; ZHUKOVSKAYA, S.A.

"Industrial centrifuges" by V.I.Sokolov. Reviewed by I.D.Boiko, S.A.Zhukovskaia. Med.prom. 16 no.5:60-61 My '62. (MIRA 15:9)
(CENTRIFUGES)

BOYKO, I.D.; ZHUKOVSKAYA, S.A.; ANNENKOVA, L.A.

Investigation of the aeration process of aerating devices. Part 2: Jet aeration. Med. prom. 14 no. 10:13-15 O '60. (MIRA 13:10)

1. Vsesoyuznyy nauchno-issledovatel'skiy institut antibiotikov.
(OXYGEN—INDUSTRIAL APPLICATIONS)

BOYKO, I.D.; ZHUKOVSKAYA, S.A.; FRIDMAN, T.I.

Construction of a cylindrical vacuum filter for hard-to-filter cultural fluids of antibiotics. Med.prom. 14 no.3:32-38 Mr '60.
(MIRA 13:6)

1. Vsesoyuznyy nauchno-issledovatel'skiy institut antibiotikov.
(FILTERS AND FILTRATION)

ZHUKOVSKAYA, S. A., Cand of Tech Sci -- (diss) "Investigation of hydrodynamics and mass-exchange in a jet extractor." Moscow, 1957, 22 pp (All-Union Scientific Research ~~Institute of~~ Chemicopharmaceutical Institute im S. Ordzhonikidze), 110 copies (KL, 37-57, 103)

ZHUKOVSKAYA, S.A.; ANNENKOVA, L.A.; BOYKO, I.D.

Use of a jet extractor for the recovery and purification of erythromycin and tetracycline. Med. prom. 13 no.5:26-33 My '59.
(MIRA 12:7)

1. Vsesoyuznyy nauchno-issledovatel'skiy institut antibiotikov.
(ANTIBIOTICS) (EXTRACTION APPARATUS)

ZHUKOVSKAYA, S.A.

KAFAROV, V.V.; ZHUKOVSKAYA, S.A.

Main characteristics of the spray extractor action and comparative effectiveness of extractors in general. Zhur.prikl. khim. 31 no.3: 376-386 Mr '58. (MIRA 11:4)

(Extraction (Chemistry))

ZHUKOVSKAYA, S.A.

KAFAROV, V.V.; ZHUKOVSKAYA, S.A.

[redacted]

Studying the operation of jet extractors used for penicillin extraction. Med. prom. 11 no.5:23-32 My '57. (MIRA 10:6)

(EXTRACTION APPARATUS) (PENICILLIN)

ZHUKOVSKAYA, S.A., veterinarnyy vrach.

Ox warbles of buffaloes in Azerbaijan. Veterinariia 31 no.5: 43 My '54.
(MLRA 7:5)

1. Zakatal'skaya mezhrayonnaya vetbaklaboratoriya, Azerbaydzhanskaya SSR.

KAFAROV, V.V., doktor tekhnicheskikh nauk, professor; ZHUKOVSKAYA, S.A.

Industrial extraction. Khim.prom. no.2:107-120 Mr '56. (MLRA 9:8)
(Extraction apparatus)

ZHUKOVSKAYA, S.S.; KOGAN, N.P.; VODOLAZHENKO, N.I.

Rapid method of preparing cement raw material for chemical analysis. TSement 28 no.5:13-14 S-O '62. (MIRA 15:11)

1. Yuzhgiprotsement.

(Cement—Analysis)

ZHUKOVSKAIA, S. S.

Budnikov, P. P. and Zhukovskaia, S. S., The method of determination of silicon by volume in cast iron and steel. p. 959

The checking of the volume method of determining silicon in bakelite vessels on standard sample gave satisfactory results. It was interesting to apply this method to the quick-cutting instruments and other kinds of steel containing tungsten, the presence of which complicates the determination of silicon by the weight method.

April 13, 1948

SO: Journal of Applied Chemistry (USSR) 21, No. 9 (1948)

ZHUKOVSKAIA, S. A.

SHEEP - DISEASES

Use of TSenkovskii's 2nd vaccine alone for preventive inoculation of sheep. Veterinariia 29, No. 10, 1952.

9. *Monthly List of Russian Accessions*, Library of Congress, December 195~~3~~2 Uncl.

ZHUKOVSKAYA, S. A. (Vet.)

"Concerning the use of one II vaccine of Tsenkovskii for protective inoculations of sheep."

SO: Vet. 29 (10) p. 29, 1952
Zakatal Veterinaro-Bacteriological Lab., Azerbaidzhan SSR

ZHUKOVSKAYA, S. A.

On skin gadfly of buffaloes in Azerbaydzhan

SO: Veterinariya; Vol. 31; No. 5; May 1954, Unclassified. (TABCON)

Veterinarian, Zakatal'skaya Interrayon veterinary Bacteriological Laboratory, Azerbaydzhan SSR

ZHUKOVSKAYA, S. A.

Vaccination

Use of TSenkovkii's 2nd vaccine alone for preventive inoculation of sheep. Veterinariia, 29, No. 10, 1952.

Monthly List of Russian Accessions, Library of Congress, December 1952. Unclassified.

ZHUKOVSKAYA, S. A.

USSR/Medicine - Veterinary, Gadfly

Card 1/1

Author : Zhukovskaya, S. A., Veterinary Physician

Title : Cutaneous gadfly of buffaloes in Azerbaydzhan SSR

Periodical : Veterinariya, 31, 43, May 1954

Abstract : Gadflies can be found in every country on earth. Large numbers of gadflies were found in the mountainous areas of Azerbaydzhan. These flies became imbedded in the hide of younger buffaloes, 2-3 years old; their activity is greatest during the month of March. Young animals that become infested with the larvae of gadflies usually lose weight and their development becomes retarded.

Institution : Zakatal'sk Inter-Rayon Veterinary Laboratory, Azerbaydzhan SSR

Submitted :

ZHUKOVSKAYA, S. A.

USSR/Medicine, Veterinary - Anthrax Oct 52

"Application of Tsenkovskiy's No II Vaccine Alone for Protective Vaccinations of Sheep," S. A. Zhukovskaya, Vet Health Officer, Zakatal'sk Vet Bacteriol Lab of Azerbaydzhan SSR

"Veterinariya" Vol 29, No 10, p 29

The 1st expt with Tsenkovskiy's No II vaccine used alone for protective vaccination of sheep against anthrax, was conducted in Sep 44. There were no complications and no deaths. Strong immunity was developed in 27,730 head of sheep. This immunity lasted up to 12-14 mos. Fall is the best time of the year

233T18

to administer the vaccine. Horses should not be treated with this vaccine, because they are highly sensitive to it.

233T18

ZHUKOVSKAYA, S. S.

Zhukovskaya, S. S., and Balyuk, S. T. RAPID ANALYSIS OF CLAYS AND ORES. *Zavodskaya Lab.*, 3, [illegible] —The improved method is more accurate than the standard procedure and reduces the time of operation from 4 to 5 to 2 to 3 days. Dissolve the precipitate of hydroxides of Al, Fe and Ti in 40 cc. of 50% HCl, boil, add 5 gm. tartaric acid, neutralize with NH_3 against phenolphthalein, acidify with 5% AcOH, add 1 gm. $AcONH_4$ and slowly 6 to 7 cc. of 1,5% o-hydroxyquinoline.HCl (I), let stand 1 hr., filter off $Fe(C_9H_6ON)_3$, wash with 1% AcONa containing 0,2% Na tartrate, dissolve in 30 cc. of 50% HCl, dilute to 150 cc., add 3 cc. H_3PO_4 (density 1.7) and titrate with $KBrO_3$ + KBr by the Berg method. Dilute the filtrate from the Fe precipitate to 250 cc., withdraw 100 cc., add concentrated HCl to neutralization (Congo red) and 4 cc. excess, pour in 5 cc. of freshly prepared 1% aqueous cupferron, stir, filter off $Ti(C_6H_5N_2O_2)_4$ (Thornton, *Chem. Abstracts*, 8, 1250), wash with cold H_2O until free from chlorides, ignite 10 to 15 min., cool and weigh as TiO_2. Dilute 50 cc. of the filtrate from Fe precipitate to 100 cc., add 20 to 25 cc. of 0.2% (I), heat gently, make faintly ammoniacal, digest 15 to 20 min. on a water bath, filter off $Al(C_9H_6ON)_3$, wash with hot solution of 2 cc. NH_4OH and 1 gm. NH_4Cl in 100 cc. H_2O, dissolve in 50% HCl, heat to 70°, dilute to 250 cc. and titrate an aliquot part with $KBrO_3$ + KBr as usual. Determine Ca as $Ca(CO_2)_2$ and Mg as $Mg(C_9H_6ON)_2$ in the filtrate. Determine the moisture and SiO_2 in separate samples.

ZHUKOVSKAYA, S. S.

Zhukovskaya, S. S., and Halyuk, S. T. RAPID ANALYSIS OF CLAYS AND GROGS. Zavodskaya Lab., 3, 881-[illegible] —The improved method is more accurate than the standard procedure and reduces the time of operation from 4 to 5 to 2 to 3 days. Dissolve the precipitate of hydroxides of Al, Fe and Ti in 40 cc. of 30% HCl, boil, add 5 gm. tartaric acid, neutralize with NH_3 against phenolphthalein, acidify with 5% AcOH, add 1 gm. $AcONH_4$ and slowly 6 to 7 cc. of 1.5% o-hydroxyquinoline·HCl (I), let stand 1 hr., filter off $Fe(C_9H_6ON)_3$, wash with 1% AcONa containing 0.2% Na tartrate, dissolve in 30 cc. of 50% HCl, dilute to 150 cc., add 3 cc. H_3PO_4 (density 1.7) and titrate with $KBrO_3$ + KBr by the Berg method. Dilute the filtrate from the Fe precipitate to 250 cc., withdraw 100 cc., add concentrated HCl to neutralization (Congo red) and 4 cc. excess, pour in 5 cc. of freshly prepared 1% aqueous cupferron, stir, filter off $Ti(C_6H_5N_2O_2)_4$ (Thornton, *Chem. Abstracts*, 8, 1250), wash with cold H_2O until free from chlorides, ignite 10 to 15 min., cool and weigh as TiO_2. Dilute 50 cc. of the filtrate from Fe, precipitate to 100 cc., add 20 to 5 cc. of 0.2% (I), heat gently, make faintly ammoniacal, digest 15 to 20 min. on a water bath, filter off $Al(C_9H_6ON)_3$, wash with hot solution of 3 cc. NH_4OH and 1 gm. NH_4Cl in 100 cc. H_2O, dissolve in 50% HCl, heat to 70°, dilute to 250 cc. and titrate an aliquot part with $KBrO_3$ + KBr as usual. Determine Ca as $Ca(CO_2)_2$ and Mg as $Mg(C_9H_6ON)_2$ in the filtrate. Determine the moisture and SiO_2 in separate samples.

Zhukovskaya, S. S. Rapid analysis of clays. *Zavodskaya Lab.*, 3 [2] 102-106 (1934).—The oxine (oxyquinoline) method allows the components entering into the composition of silicates to be determined directly; it reduces the time needed for an analysis to 3 days, provided SiO_2 be determined from a separate sample. All components can be determined in the presence of silica. The order of determination of separate elements can be changed. The use of electrical furnaces and of platinum is limited to a minimum. A detailed description of the procedure is given.

Zhukovskaya, S. S., and Halyuk, S. I. RAPID ANALYSIS OF CLAYS AND GROGS. *Zavodskaya Lab.*, 3, [illegible]

The improved method is more accurate than the standard procedure and reduces the time of operation from 4 to 5 to 2 to 3 days. Dissolve the precipitate of hydroxides of Al, Fe and Ti in 10 cc. of 50% HCl, boil, add 5 gm. tartaric acid, neutralize with NH_3 against phenolphthalein, acidify with 5% AcOH, add 1 gm. $AcONH_4$ and slowly 6 to 7 cc. of 1.5% o-hydroxyquinoline HCl (I), let stand 1 hr., filter off $Fe(C_9H_6ON)_3$, wash with 1% AcONa containing 0.2% Na tartrate, dissolve in 30 cc. of 50% HCl, dilute to 150 cc., add 3 cc. H_3PO_4 (density 1.7) and titrate with $KBrO_3$ + KBr by the Berg method. Dilute the filtrate from the Fe precipitate to 250 cc., withdraw 100 cc., add concentrated HCl to neutralization (Congo red) and 4 cc. excess, pour in 5 cc. of freshly prepared 1% aqueous cupferron, stir, filter off $Ti(C_6H_5N_2O_2)_4$ (Thornton, *Chem. Abstracts*, 8, 1250), wash with cold H_2O until free from chlorides, ignite 10 to 15 min., cool and weigh as TiO_2. Dilute 50 cc. of the filtrate from Fe, precipitate to 100 cc., add 20 to 25 cc. of 0.2% (I), heat gently, make faintly ammoniacal, digest 15 to 20 min. on a water bath, filter off $Al(C_9H_6ON)_3$, wash with hot solution of 2 cc. NH_4OH and 1 gm. NH_4Cl in 100 cc. H_2O, dissolve in 50% HCl, heat to 70°, dilute to 250 cc., and titrate an aliquot part with $KBrO_3$ + KBr as usual. Determine Ca as $Ca(CO_2)_2$ and Mg as $Mg(C_9H_6ON)_2$ in the filtrate. Determine the moisture and SiO_2 in separate samples.

Zhukovskaya, S. S., and Haiyuk, S. E. Rapid analysis of clays and grogs. *Zavodskaya Lab.* 3, [illegible]

The improved method is more accurate than the standard procedure and reduces the time of operation from 4 to 5 to 2 to 3 days. Dissolve the precipitate of hydroxides of Al, Fe and Ti in 10 cc. of 50% HCl, boil, add 5 gm. tartaric acid, neutralize with NH_3 against phenolphthalein, acidify with 5% AcOH, add 1 gm. $AcONH_4$ and slowly 6 to 7 cc. of 1.5% o-hydroxyquinoline HCl (I), let stand 1 hr., filter off $Fe(C_9H_6ON)_3$, wash with 1% AcONa containing 0.2% Na tartrate, dissolve in 30 cc. of 50% HCl, dilute to 150 cc., add 3 cc. H_3PO_4 (density 1.7) and titrate with $KBrO_3$ + KBr by the Berg method. Dilute the filtrate from the Fe precipitate to 250 cc., withdraw 100 cc., add concentrated HCl to neutralization (Congo red) and 4 cc. excess, pour in 5 cc. of freshly prepared 1% aqueous cupferron, stir, filter off $Ti(C_6H_5N_2O_2)_4$ (Thornton, *Chem. Abstracts* 8, 1250), wash with cold H_2O until free from chlorides, ignite 10 to 15 min., cool and weigh as TiO_2. Dilute 50 cc. of the filtrate from Fe precipitate to 100 cc., add 20 to 5 cc. of 0.2% (I), heat gently, make faintly ammoniacal, digest 15 to 20 min. on a water bath, filter off $Al(C_9H_6ON)_3$, wash with hot solution of 2 cc. NH_4OH and 1 gm. NH_4Cl in 100 cc. H_2O, dissolve in 50% HCl, heat to 70°, dilute to 250 cc. and titrate an aliquot part with $KBrO_3$ + KBr as usual. Determine Ca as $Ca(CO_2)_2$ and Mg as $Mg(C_9H_6ON)_2$ in the filtrate. Determine the moisture and SiO_2 in separate samples.

ZHUKOVSKAYA, S. S.

"Volumetric Method for Determining Silicon in Pig Iron and Stell,"

Zhur. Prik. Khim., 21, No. 9, 1948.

1ST AND 2ND ORDERS

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3RD AND 4TH ORDERS

Al

a

*Determination of Aluminium by Titration of Excess of 8-Hydroxyquinoline (Oxine). S. S. Zhukovskaja and S. T. Baluk (*Zavodskaia Laboratoria* (*Works' Lab.*), 1935, 4, (4), 397–401).—[In Russian.] The Al is precipitated with a known volume of standard oxine solution in the presence of $CH_3 \cdot CO_2Na$, the precipitate is removed and the filtrate acidified with HCl, and the oxine excess titrated with KBr-$KBrO_3$ solution.—D. N. S.

ASM-SLA METALLURGICAL LITERATURE CLASSIFICATION

Zhukovskaya, S. S., and Haiyuk, M. T. RAPID ANALYSIS OF CLAYS AND OCHERS. *Zavodskaya Lab.*, 3, 483–85 (1934).—The improved method is more accurate than the standard procedure and reduces the time of operation from 4 to 5 to 2 to 3 days. Dissolve the precipitate of hydroxides of Al, Fe and Ti in 40 cc. of 50% HCl, boil, add 5 gm. tartaric acid, neutralize with NH_3 against phenolphthalein, acidify with 5% AcOH, add 1 gm. $AcONH_4$ and slowly 6 to 7 cc. of 1.5% o-hydroxyquinoline·HCl (I), let stand 1 hr., filter off $Fe(C_9H_6ON)_3$, wash with 1% AcONa containing 0.2% Na tartrate, dissolve in 30 cc. of 50% HCl, dilute to 150 cc., add 3 cc. H_3PO_4 (density 1.7) and titrate with $KBrO_3$ + KBr by the Berg method. Dilute the filtrate from the Fe precipitate to 250 cc., withdraw 100 cc., add concentrated HCl to neutralization (Congo red) and 4 cc. excess, pour in 5 cc. of freshly prepared 1% aqueous cupferron, stir, filter off $Ti(C_6H_5N_2O_2)_4$ (Thornton, *Chem. Abstracts*, 8, 1250), wash with cold H_2O until free from chlorides, ignite 10 to 15 min., cool and weigh as TiO_2. Dilute 50 cc. of the filtrate from Fe, precipitate to 100 cc., add 20 to 5 cc. of 0.2% (I), heat gently, make faintly ammoniacal, digest 15 to 20 min. on a water bath, filter off $Al(C_9H_6ON)_3$, wash with hot solution of 2 cc. NH_4OH and 1 gm. NH_4Cl in 100 cc. H_2O, dissolve in 50% HCl., heat to 70°, dilute to 250 cc. and titrate an aliquot part with $KBrO_3$ + KBr as usual. Determine Ca as $Ca(CO_2)_2$ and Mg as $Mg(C_9H_6ON)_2$ in the filtrate. Determine the moisture and SiO_2 in separate samples.

ZHUKOVSKAYA, S.S.; LEVINA, K.Ya.; VODOLAZHENKO, N.I.; Prinimal uchastiye SHULYATNIKOVA, N.Ya., inzh.

Rapid volumetric method of determining the silicic acid content of raw material, raw mixes, and finished product in cement production. TSement 27 no.3:21-23 My-Je '61. (MIRA 14:7)
(Silicic acid) (Cement)

1ST AND 2ND ORDERS

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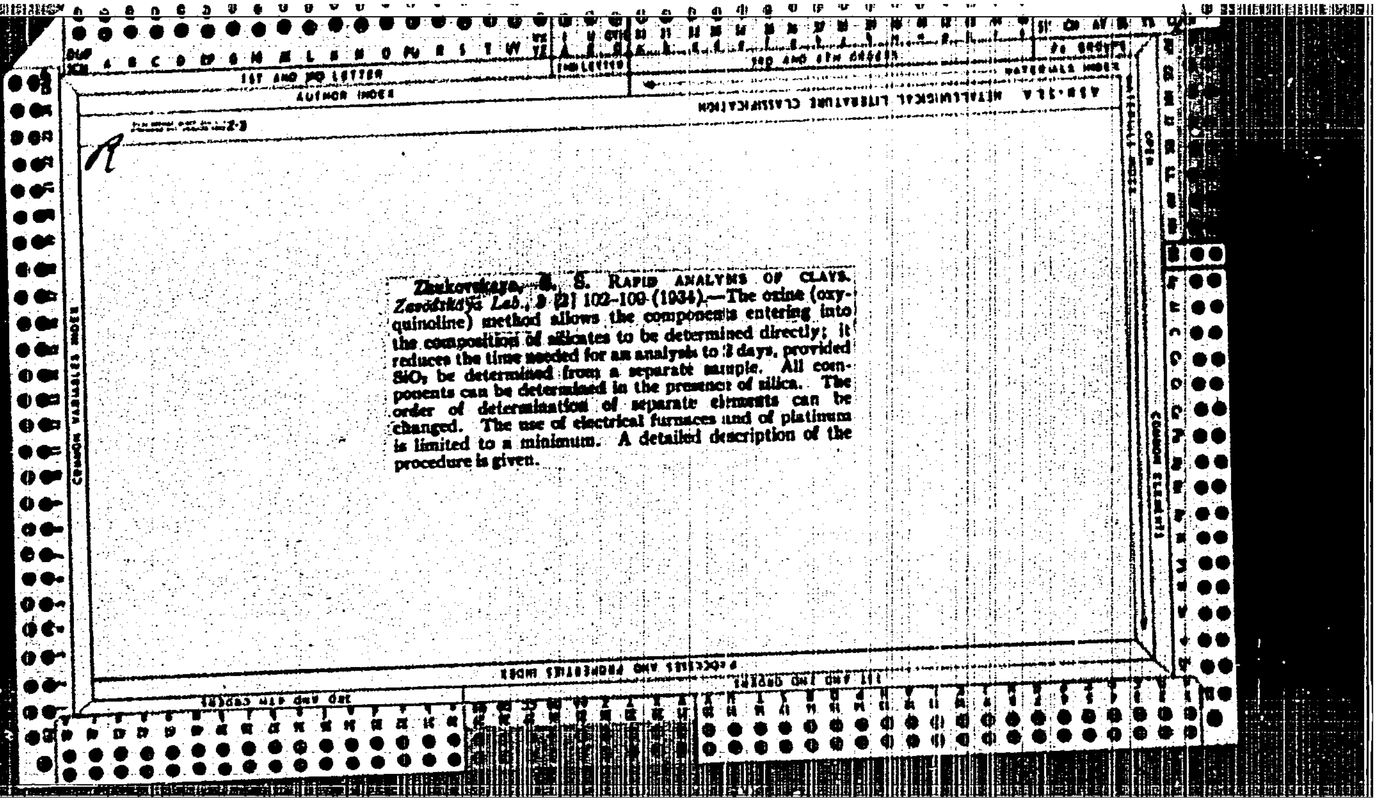
COMMON ELEMENTS

Cd

Determination of silicon in cast iron and steel by a volumetric method. P. P. Budnikov and S. S. Zhukovskaya.—*Zhur. Priklad. Khim.* (*J. Applied Chem.*) 21, 959-61(1948).—The method is based on pptn. of K_2SiF_6 followed by titration with NaOH. Cf. Karpov and Savchenko (*C.A.* 32, 1208^4). G. M. Kosolapoff



1ST AND 2ND LETTER
AUTHOR INDEX
ASM-SLA METALLURGICAL LITERATURE CLASSIFICATION

A

Zhukovskaya, [illegible] S. RAPID ANALYSIS OF CLAYS. *Zavodskaya Lab.*, 3 (2) 102-109 (1934).—The oxine (oxyquinoline) method allows the components entering into the composition of silicates to be determined directly; it reduces the time needed for an analysis to 3 days, provided SiO_2 be determined from a separate sample. All components can be determined in the presence of silica. The order of determination of separate elements can be changed. The use of electrical furnaces and of platinum is limited to a minimum. A detailed description of the procedure is given.

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B

Method of Volumetric Determination of Silicon in Cast Irons and Steels. (In Russian.) P. P. Budnikov and S. S. Zhukovskaya. *Zhurnal Prikladnoi Khimii* (Journal of Applied Chemistry), v. 21, Sept. 1948, p. 959-961.

Proposes application of a modified volumetric method based on the precipitation of potassium silicon fluoride followed by titration of the precipitate. Data obtained by above method and by the gravimetric method are compared and tabulated.

ASM-SLA METALLURGICAL LITERATURE CLASSIFICATION

A

5

108-18. METHOD OF VOLUMETRIC DETERMINATION OF SILICON IN CAST IRONS AND STEELS. (In Russian.) F. F. Budnikov and S. S. Zhukovskaya. *Zhurnal Prikladnoi Khimii* (Journal of Applied Chemistry), v. 21, Sept. 1948, p. 959-961.

A modified volumetric method based on the precipitation of potassium silicon fluoride followed by titration of the precipitate. Data obtained by above method and by the gravimetric method are compared.

ASM-SLA METALLURGICAL LITERATURE CLASSIFICATION

C-7. Inorganic, Chem. -

Br. Abs.

2143. **Volumetric determination of silicon in iron and steel.** P. P. Budnikov and S. S. Zhukovskaya (*J. appl. Chem., USSR*, 1948, **21**, 959—961).—The method of Karpov and Savtschenko (B., 1938, 380) is preferred. Bakelite vessels may be used in place of Pt for pptn. of K_2SiF_6.

R. Truscoe.

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7

A rapid method for the determination of silica in blast furnace slags by means of ammonium chloride. P. F. Budnikov and S. S. Zhukovskaya. *J. Applied Chem. (U. S. S. R.)* 10, 1500-5(in German 1505)(1937).—Mix 0.5 g. sample of slag, portland cement or clinker with cryst. 0.5 g. NH_4Cl and treat with 5 cc. of HCl (d. 1.19), warm on the water bath for 20 min., keeping the beaker always covered with a watch glass, and filter, taking care to transfer it completely to a filter paper and to drain all HCl without diluting with water. Transfer the ppt. remaining on the walls of the beaker to the filter paper by washing with hot water and wash the total ppt. with small portions of hot water until the wash water is free from Cl. Dry the ppt. and filter, ash in a Pt or a porcelain crucible, ignite at 1000° to const. wt., cool in a desiccator and weigh. Calc. the percentage of SiO_2 from $(a - b) \times 100/0.5$, where a is the crucible wt. with the ppt., b that of the crucible only and 0.5 is the wt. of sample. Three references. A. A. Podgorny

ASM-SLA METALLURGICAL LITERATURE CLASSIFICATION

1ST AND 2ND ORDERS

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ER

1

Systematic analysis of clays and chamotte with 8-hydroxyquinoline. S. S. Zhukovskaya. *Zavodskaya Lab.* 3, 102-9(1934); cf. Tsinberg (preceding abstr.).—The method provides for the detn. of Fe, Al, Ti, Ca and Mg as oxine salts after fusing the sample with Na_2CO_3 and dissolving the melt in dil. HCl. Chas. Blanc

ASM-SLA METALLURGICAL LITERATURE CLASSIFICATION

1ST AND 2ND ORDERS

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CA

7

Rapid determination of aluminum in clay. S. S. Zhukovskaya and M. I. Volinets. *Zavodskaya Lab.* 7, 610-11(1938).—Fuse 0.1 g. of dry clay with 2 g. of NaOH, ext. the melt with water and det. Al in the filtrate with 8-hydroxyquinoline. B. C. A.

ASM-SLA METALLURGICAL LITERATURE CLASSIFICATION

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UX

7

Determination of phosphorus in cast iron and steel with the aid of 8-hydroxyquinoline. S. S. Zhukovskaya and S. S. Bernshtein. *Zavodskaya Lab.* 3, 214-16(1934); cf. preceding abstr. and C. A. 27, 4071.—Dissolve 2 g. of the sample in 20 cc. HNO_3 (1:1), evap. to dryness, ignite over a free flame to expel nitrates, cool, add 35 cc. HCl (d. 1.19), dil. to 160 cc., add with stirring 30 cc. of 10% NH_4 molybdate and 20 cc. of 0.8% HCl soln. of 8-hydroxyquinoline, filter, wash free from Fe with a mixt. of 3 cc. of concd. HCl and 3 g. NaCl in 100 cc. H_2O, dissolve the ppt. in a mixt. of 10 cc. of concd. HCl, 20 cc. alc. and 20 cc. H_2O previously heated to 70-80°, dil. to 100 cc., add 0.1 N KBr-$KBrO_3$ (5-7 cc.) in the presence of starch soln. to a yellow soln., add some more starch soln. and 5 cc. of 10% KI and titrate with $Na_2S_2O_3$. The detn. consumes 2.5-3.5 hrs. and can be used in the presence of SiO_2 and As with an accuracy within ±0.002% as compared with the gravimetric Mo method.

Chas. Blanc

METALLURGICAL LITERATURE CLASSIFICATION

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CR

19

Rapid analysis of clays and grogs. S. S. Zhukovskaya
and S. T. Balyuk. *Zavodskaya Lab.* 3, 485-8(1946);
cf. Zhukovskaya, *C. A.* 29, 70⁴.—The improved method is
more accurate than the standard procedure and reduces
the time of operation from 4-5 to 2-3 days. Dissolve the
ppt. of hydroxides of Al, Fe and Ti in 40 cc. of 50% HCl,
boil, add 5 g. tartaric acid, neutralize with NH_3 against
phenolphthalein, acidify with 5% AcOH, add 1 g. $AcONH_4$
and slowly 6-7 cc. of 1.5% o-hydroxyquinoline-HCl (I),
let stand 1 hr., filter off $Fe(C_9H_6ON)_3$, wash with 1%
AcONa contg. 0.2% Na tartrate, dissolve in 30 cc. of
50% HCl, dil. to 150 cc., add 3 cc. H_3PO_4 (d. 1.7) and
titrate with $KBrO_3$ + KBr by the Berg method. Dil. the
filtrate from the Fe ppt. to 250 cc., withdraw 100 cc.,

add concd. HCl to neutralization (Congo red) and 4 cc.
excess, pour in 5 cc. of freshly prepd. 1% aq. cupferron,
stir, filter off $Ti(C_6H_5N_2O_2)_4$ (Thornton, *C. A.* 8, 1260),
wash with cold H_2O until free from chlorides, ignite 10-15
min., cool and weigh as TiO_2. Dil. 50 cc. of the filtrate
from Fe ppt. to 100 cc., add 20-5 cc. of 0.2% I, heat
gently, make faintly ammoniacal, digest 15-20 min. on
a water bath, filter off $Al(C_9H_6ON)_3$, wash with hot soln.
of 2 cc. NH_4OH and 1 g. NH_4Cl in 100 cc. H_2O, dissolve
in 50% HCl, heat to 70°, dil. to 250 cc. and titrate an
aliquot part with $KBrO_3$ + KBr as usual. Det. Ca as
$Ca(CO_2)_2$ and Mg as $Mg(C_9H_6ON)_2$ in the filtrate. Det.
the moisture and SiO_2 in sep. samples. Chas. Blanc

ASB-SLA METALLURGICAL LITERATURE CLASSIFICATION

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PROCESSES AND PROPERTIES INDEX

3RD AND 4TH ORDERS

CA

10

Rapid systematic analysis of portland cement and clinker and blast-furnace slags. P. P. Budnikov and S. S. Zhukovskaya. *Zavodskaya Lab.* 7, 1124-33(1938).—Two procedures with variations for systematic analysis of cement and slag, involving known volumetric, colorimetric and kalometric methods, are described in detail. Ten references. Chas. Blanc

ASM-SLA METALLURGICAL LITERATURE CLASSIFICATION

PROCESSES AND PROPERTIES INDEX

Determination of aluminum by titrating the excess of 8-hydroxyquinoline. S. S. Zhukovskaya and S. T. Balyuk. *Zavodskaya Lab.* 4, 397-401 (1935); cf. *C. A.* 29, 3265⁵. Evap. to dryness 4-5 cc. of 50% NaOH in a Ni or Ag crucible, introduce 0.1 g. of sample (clay, grog or bauxite), wet with 2 cc. of 50% aq.-alc. NaOH, evap. and heat at 500-50° for 3 min. Digest the fusion with H_2O on a water bath for 5-10 min., filter, wash the residue with hot 3% NaCl contg. 0.5% NaOH, acidify with HCl (Congo red), add 1-2 drops of HCl, dil. the soln. to 150-200 cc., introduce a measured vol. of standard soln. of "oxine" (23 cc. of 1.5% "oxine" for clays and grogs and 33 cc. for bauxite), add 3-4 g. NaOAc, digest on a water bath at 65-75° for 20-25 min., filter, dil. to 250 cc., add an excess of 10 cc. of concd. HCl and titrate with KBr + $KBrO_3$ against indigo carmine as usual.

Chas. Blanc

ASM-SLA METALLURGICAL LITERATURE CLASSIFICATION

1ST AND 2ND ORDERS

PROCESSES AND PROPERTIES INDEX

21

5

DETERMINATION OF SILICON IN CAST IRON AND STEEL BY A VOLUMETRIC METHOD. P.P. Budnikov and S.S. Zhukoskaya. (Journal of Applied Chemistry, U.S.S.R., 1948, vol. 21, pp. 959-961: Chemical Abstracts, 1949, vol. 43, Aug. 10, col. 5700). The method described is based on the precipation of K_2SiF_6, followed by titration with NaOH.

ASM-SLA METALLURGICAL LITERATURE CLASSIFICATION

ZHUKOVSKAYA, V. [Zhukouskaia, V.], kand. pedagog. nauk

Can the characters of parents be transmitted to their offspring? Rab. i sial. 39 no.9:21 S '63. (MIRA 16:11)

ZHUKOVSKAYA, V.I. [Zhukouskaia, V.I.], kand.pedagog.nauk

Inculcate courteous manners in children. Rab.i sial. 37 no.3:
18-19 Jl '61. (MIRA 15:2)

(Children--Management)

ZHUKOVSKAYA, V.I., inzhener.

[redacted]

Utilization of condensate from engines and boilers in plants under the Ministry of Electric Power Stations. Prom.energ. 11 no.7:35 Jl.'56. (MLRA 9:10)

(Feed water) (Waste heat)

ZHUKOVSKAYA, V.I.

Measuring hot water consumption. Energetik 2 no.2:35 F '54.
(MLRA 7:4)
(Water meters)

ZHUKOVSKAYA, V.I. [Zhukouskaia, V.I.], kand.pedagog.nauk

Why some children are very bashful? Rab.i sial, 38 no.9:21
S '62. (MIRA 15:9)

(Bashfulness)

MEDVEDKOV, Yu.V., kand.geogr.nauk; ROZIN, M.S., kand.ekon.nauk;
ZHUKOVSKAYA, V.M.; KUROPYATNIK, R.P., kand.geogr.nauk;
POKSHISHEVSKIY, V.V., prof., red.; GAVRIN, P.N., tekhn.red.

[Canada; present-day condition and new features of the economic geography] Kanada; sovremennoe sostoianie i novye cherty geografii khoziaistva. Pod red. V.V.Pokshishevskogo. Moskva, Vses.in-t nauchn. i tekhn.informatsii, 1959. 93 p. (MIRA 13:2)

(Canada--Economic conditions)

KLESHCHEVA, Ye.P.; ZHUKOVSKAYA, V.S.

Connection between a course on chemistry and instruction at a plant. Khim. v shkole 15 no.3:29-35 My-Je '60. (MIRA 14:7)
(Education, Cooperative) (Chemistry--Study and teaching)

ZHUKOVSKAYA, Ye.A.

Separation of minerals in the liquid M-45 and bromoform. Vest. LGU 19 no.18:110-111 '64. (MIRA 17:11)

L 65124-65 EWP(e)/EWT(m)/EWP(i)/EWP(b) WH
ACCESSION NR: AP5021588 UR/0286/65/000/013/0058/0059

21

AUTHORS: Zhukovskaya, Ye. A.; Kalechina, M. A.; Krasin, V. I.; Trusovtsova, M. S.; Tikhova, N. V.

B

TITLE: Apparatus for depositing current-conducting films on glass. Class 32, No. 172458

SOURCE: Byulleten' izobreteniy i tovarnykh znakov, no. 13, 1965, 58-59

15

TOPIC TAGS: film processing, thin film circuit, industrial blower, glass coating

ABSTRACT: This Author Certificate presents an apparatus for depositing current-conducting films on glass. The apparatus contains supports with blowers, plates, fixing connectors, and a reducer with

ASSOCIATION: none

Card 1/2

L 65124-65

ACCESSION NR: AP5021586

SUBMITTED: 13Apr64

ENCL: 00

SUB CODE: IE

NO REF SOV: 000

OTHER: 000

ACC NR: AP6035252 (A) SOURCE CODE: UR/0377/66/000/004/0057/0063

AUTHOR: Sheklein, A. V.; Rekant, N. B.; Zhukovskaya, Ye. A.; Yurkova, S. V.; Baulina, M. A.;

ORG: State Scientific Research Institute of Energy im. G. M. Krzhizhanovskiy (Gosudarstvennyy nauchno-issledovatel'skiy energeticheskiy institut)

TITLE: Optical characteristics of electroconductive glasses coated with a tin-oxide film

SOURCE: Geliotekhnika, no. 4, 1966, 57-63

TOPIC TAGS: glass, electroconductive glass, tin oxide film, electroconductive film

ABSTRACT: Results of an investigation of the transmission, light reflection, and emission coefficients of industrial and laboratory glass samples coated with electroconductive tin-oxide film are given. The values were analyzed for the ground-level solar spectrum range (0.3—2.5 mμ) and the spectral range corresponding to the thermal radiation (4—20 mμ) of radiant energy receivers

Card 1/2

ACC NR: AP6035252

not provided with concentrators. Technological conditions are described for coating the glass with the electroconductive film and the composition is given for some additives for improving the optical parameters. An empirical relation of electric conductivity, measured during the technological process, with the optical characteristics is shown. Orig. art. has: 5 figures and 2 tables. [Based on authors' abstract]

[NT]

SUB CODE: 11, 20/SUBM DATE: none/ORIG REF: 005/OTH REF: 001/

Card 2/2

YANISHEVSKIY, V.M., ZHUKOVSKAYA, Ye.A.; REZNIK, N.P.

Contactors for glasses with current-conducting films. Stek. i ker. 17 no.8:25-26 Ag '60. (MIRA 13:8)
(Glass) (Electric contactors)

IDELSON, L. I.; ZHUKOVSKAYA, Ye. D.

"Studies of erythropoietic action of cobalt in anemia."

report submitted to 10th Cong, Intl Society of Hematology, Stockholm, Sweden, 30 Aug-4 Sep 64.

Central Hospital, Min of Transport, Moscow.

IDEL'SON, L.I.; ZHUKOVSKAYA, Ye.D.

Cobalt content in the urine of healthy people. Probl. gemat. i perel. krovi 8 no.7:24-26 Jl '63. (MIRA 17:10)

1. Iz gruppy chlena-korrespondenta AMN SSSR prof. P.I. Yegorova pri Institute terapii (dir. -deystvitel'nyy chlen AMN SSSR prof. A. L. Myasnikov) AMN SSSR na baze TSentral'noy klincheskoy bol'nitsy Ministerstva putey soobshcheniya SSSR.

ZHUKOVSKAYA, YE. G.

USSR/Surface Phenomena. Adsorption. Chromatography. Ion Interchange B-13

Abs Jour : Ref Zhur - Khimiya, No 8, 1957, 26362

Author : M.M. Dubinin (I); M.M. Dubinin, Ye.G. Zhukovskaya (I and II).

Title : Study of Porous Structure of Solid Bodies by Sorption Methods. I. Analysis of Various Methods of Computation of Pore Volume Distribution. II. Comparison of Various Methods of Distribution Computation according to Volumetric Dimensions and Surface of Pores of Sorbents with Typical Experimental Material.

Orig Pub : Zh. fiz. khimii, 1956, 30, No 7, 1652-1661; No 8, 1840-1351

Abstract : I. Various methods of computation of the distribution of the volume and surface of pores in accordance to their dimensions in case of porous sorbents were compared on the basis of experimental isotherms of vapor sorption. It is shown that the methods based on the theory of capillary condensation (CC) and on considering adjustments for vapor adsorption practically differ very little one from another. The change in the surface S_a of a cylindrical pore with the increase of the layer thickness is not taken into consideration in the 1st variation of Dubinin's method, and in the 2nd variation it is taken into consideration approximately but simply; the adjustments for the volume V_a and for 1 in the methods 1 and 2 are intro-

Card : 1/4

USSR/Surface Phenomena. Adsorption. Chromatrography. Ion Interchange. B-13

Abs Jour : Ref Zhur - Khimiya, No 8, 1957, 26362

duced on the basis of the experimental adsorption isotherm of the selected vapor on a non-porous adsorbent of the same chemical nature (quartz in case of silica gel, soot in case of active carbons, etc.); the point on the isotherm, at which the hysteresis starts, is accepted as the lower boundary of the applicability of the methods 1 and 2, which is physically justified, if the departure point was the CC theory. It is noted that the computations by the method of Barrett-Joiner-Halend, which is the most rigorous from the point of view of the assumed geometrical model of the sorbent, become very cumbersome, and a series of simplifications, which are not justified physically, are introduced to render the computation easier. The methods, in which 1 is assumed to be constant in the region of CC, are also discussed.

II. The distribution acording to the dimensions of the volume and surface of pores was computed by the methods 1, 2, and 3 using bibliographical data about the sorption of N_2 at 78.1°K on a relatively fine-porous aluminosilicate catalyst (ASC) (p / p_s 0.35 to 0.95) and the isotherms of C_6H_6 sorption

Card : 2/4

USSR/Surface Phenomena; Adsorption; Chromatography. Ion Interchange B-13

Abs Jour : Ref Zhur - Khimiya, No 8, 1957, 26362

recorded by the authors at 20° on active carbon (AC) with a developed transition porosity (p / p_s 0.75 to 1.00). The adjustment for the adsorption of N_2 on ASC was computed using the computation tables of the method 3, and the adjustment for C_6H_6 adsorption on AC was computed using the adsorption isotherm of C_6H_6 at 20° on spenone-6 sooth. It is shown that the computation results by all the three methods are close, and that the results by the 2nd and 3rd methods are practically the same. Of all the approximate methods, in which 1 is assumed constant (and, according to Dubinin, corresponding to the value at the start of CC, but according to Olton, corresponding to the mean value of the CC region) or equal to zero in the limiting case, the Dubinin's method yields results which are the closest to the results obtained by rigorous methods. It is shown than among the rigorous methods, the most preferable is the 2nd. The conclusion is arrived at that the rigorous methods based of the CC theory should not be applied to silica gels and other sorbents

Card : 3/4

USSR/Surface Phenomena, Adsorption. Chromatography. Ion Interchange B-13

Abs Jour : Ref Zhur - Khimiya, No 8, 1957, 26362

similar to them with a pore radius under 15 A in consequence of the rise of adsorption potentials in fine pores ($\Delta \varphi$), and that in case of apolar AC-s, where $\Delta \varphi$ is still greater, these methods are applicable only to the computation of the distribution of transition pores; the approximate methods may be applied only at relatively uniformly porous sorbents and on condition that the constant thickness of the adsorption layer is selected for p / p_s answering the most probable efficiency radius of the sorbent pores.

Card : 4/4

DUBININ, M.M.; ZHUKOVSKAYA, Ye.G.

[redacted]

Sorption methods in the study of porous structures of solids. Part 2. Comparison of various methods for the calculation of pore distribution by their volume and surface in sorbents with the use of typical experimental materials. Zhur.fiz.khim. 30 no.8:1840-1850 Ag '56. (MIRA 10:1)

1. Akademiya nauk SSSR, Institut fizicheskoy khimii, Moskva.
(Porosity) (Sorbents)

CHMUTOV, K.V.; ZHUKOVSKAYA, Ye.G.

Nikolai Aleksandrovich Shilov. Znan.sila 31 no.5:14-20 My '56.
(MLRA 9:8)

1. Chlen-korrespondent Akademii nauk SSSR.
(Shilov, Nikolai Aleksandrovich, 1872-1930)

AUTHORS: Dubinin, M. M., Zhukovskaya, Ye. G. 62-58-5-2/27

TITLE: On the Adsorption-Properties of the Carbon-Adsorbents (Ob adsorbtsionnykh svoystvakh uglerodnykh adsorbentov) Communication 2: Investigation of the Adsorption-Properties of Active Coals by Benzene-and Nitrogen-Vapors (Soobshcheniye 2. Issledovaniye adsorbtsionnykh svoystv aktivnykh ugley po param benzola i azota)

PERIODICAL: Izvestiya Akademii Nauk SSSR, Otdeleniye Khimicheskikh Nauk, 1958, Nr 5, pp. 535 - 544 (USSR)

ABSTRACT: As is known, nitrogen-and benzene-vapors are used as standard substances for the investigation and classification of the adsorption-properties of active coals. Up till now, a congruence of the adsorbing properties of active coals above nitrogen-and benzene-vapors has not yet been found, however. The purpose of this work is the investigation of this problem. The adsorbing properties of some samples of active coals above benzene-vapors at 2o°C and nitrogen-vapors at -195°C were investigated above all. It was found that in both cases the adsorption depends on the dispersive interaction of the molecules

Card 1/2

On the Adsorption-Properties of the Carbon-Adsorbents. 62-58-5-2/27
Communication 2: Investigation of the Adsorption-Properties of Active Coals by Benezene-and Nitrogen-Vapors

(of the vapors) with the surface of the active coals. The coefficient of affinity of the characteristic nitrogen-curves was calculated. The fundamental causes of the difference of the adsorption-volumina of nitrogen and benzene for the points of the beginning of the hysteresis of the isothermal lines of adsorption were analysed. More rational methods of volume-determination of the micro-and transit-pores (perekhodnyye pory) of active coals were described and substantiated. The problem of the selection of a standardized vapor for the characteristic of the adsorption-properties of active coals was discussed. There are 4 figures, 6 tables and 21 references, 17 of which are Soviet.

ASSOCIATION: Institut fizicheskoy khimii Akademii nauk SSSR (Institute for Physical Chemistry AS USSR)

SUBMITTED: March 13, 1957

1. Activated carbons--Adsorptive properties 2. Vapors--Adsorption 3. Benzene--Applications 4. Nitrogen--Applications

Card 2/2

DUBININ, M.M., akademik; ZHUKOVSKAYA, Ye.G.

Characteristics of the adsorption of vapors by microporous adsorbents. Dokl. AN SSSR 156 no. 2:404-407 My '64.
(MIRA 17:7)

1. Institut fizicheskoy khimii AN SSSR.

L 1125-66 EWT(m)/T

ACCESSION NR: AP5022938 UR/0062/65/000/008/1500/1502
541.183+546.284

44,55 44,55 44,55 44,55

AUTHOR: Dubinin, M. M.; Zhukovskaya, Ye. G.; Luk'yanovich, V. M.; Murdmaa, K. O.; Polstyanov, Ye. F.; Senderov, E. E. 44,55
44,55 44,55

TITLE: Adsorption volumes of synthetic mordenites

42
36
B

SOURCE: AN SSSR. Izvestiya. Seriya khimicheskaya, no. 8, 1965, 1500-1502

TOPIC TAGS: molecular sieve, synthetic zeolite, mordenite

ABSTRACT: Adsorption (pore) volumes of sodium and hydrogen forms of synthetic mordenite were determined in order to check them against the corresponding values calculated on the basis of X-ray analysis. For comparison, also H-Zeolon (product of Norton Company) was examined. The saturation volumes of Na and H synthetic mordenites were determined from water vapor isotherm at 20°C, nitrogen and argon isotherms taken at -196°C, and from sorption and desorption isotherms for benzene taken at 20°C and various pressures. For all mordenites an excellent agreement was found between the calculated pore volumes and the values obtained from water vapor, nitrogen, and argon adsorption measurements, while benzene adsorption gave values for the pore volumes that were too low. This was due to the fact that the small cavities in the

Card 1/2

L 1125-66

ACCESSION NR: AP5022938

6

mordenite tube-like channels were inaccessible to benzene. It was concluded that only the channels with openings made of oxygen rings containing 12 atoms are accessible to benzene. Orig. art. has: 2 figures, 2 tables.

44,55

ASSOCIATION: Institut fizicheskoy khimii Akademii nauk SSSR (Institute of Physical Chemistry, Academy of Sciences, SSSR); Institut geokhimii i analiticheskoy khimii im. V. I. Bernadskogo Akademii nauk SSSR (Institute of Geochemistry and Analytical Chemistry, Academy of Sciences, SSSR)

44,55

SUBMITTED: 17Dec64 ENCL: 00 SUB CODE: MT, GC

NO REF SOV: 004 OTHER: 003

Card 2/2

L 16293-65 EWT(m)/T Pb-4

ACCESSION NR: AP4045793 S/0062/64/000/009/1565/1573

AUTHOR: Dubinin, M. M.; Zhdanov, S. P.; Zhukovskaya, Ye. G.; Murdmaa, [illegible] Shishakov, [illegible]

TITLE: Investigation of the adsorption properties and secondary porous structure of adsorbents having molecular sieve functions. Communication 9. Parameters of the elementary [illegible] cells and adsorption capacity of synthetic type A zeolites

SOURCE: AN SSSR. Izv. Seriya khimicheskaya, no. 9, 1964, 1565-1573

TOPIC TAGS: adsorptive property, secondary porous structure, adsorbent, molecular sieve, elementary crystal cell parameter

ABSTRACT: Experimental data was obtained and calculations were made to evaluate the effect of the a_{0A} parameters of the cubic elementary crystal cells on the volume of the major cavities and on the adsorption capacity of type A zeolites [illegible] of the major cavities in water adsorption by zeolites [illegible]. In calculating the volume of the major cavities

Card 1/3

L 16293-65
ACCESSION NR: AP4045793

of type A zeolites, based on x-ray structural data, it was necessary to take into account the parameters of the elementary crystal cells (a_{0A}). The following relationships were found to be quite accurate for obtaining values for the volume of the major cavity: $V_{mA} = 200.0a_{0A} - 1888Å^3$, or $V_{mA} = 417.9a_{0A} - 4378Å^3$. Thus the calculated volume and the experimental adsorption capacity increased noticeably as the elementary crystal cell parameter increased. Experimental data on the equilibrium adsorption of water by NaA crystalline zeolites at 20-100C and equilibrium relative pressures of $5x10^{-4} - 3x10^{-1}$ fully confirm the potential theory of adsorption. Approximately 24 water molecules were adsorbed in a major cell of the type A zeolite. Based on its geometry, a minor cavity could contain 2-3 water molecules, but based on experimental data, adsorption of water in previously dehydrated crystals of NaA zeolite takes place only in the major cavity. Thus the role of the minor cavities in water adsorption is still to be established. "The authors thank Ye. N. Yegorov for chemical analysis of the zeolite samples and N. G. Yl'ko for conducting individual experiments." Orig. art. has: 7 tables, 2 figures and 5 equations.

Card 2/3

L 16293-65

ACCESSION NR: AP4045793

2

ASSOCIATION: Institut fizicheskoy khimii Akademii nauk SSSR (Institute of Physical Chemistry Academy of Sciences SSSR); Institut khimii silikatov Akademii nauk SSSR (Institute of Silicate Chemistry Academy of Sciences SSSR)

SUBMITTED: 29Dec62 ENCL: 00

SUB CODE: GC NO REF SOV: 004 OTHER 004

Card 3/3

L 16157-65 EWT(m); T Pb-4 SSD/AFWL/AS(mp)-2

ACCESSION NR: AP4045794 S/0062/64/000/009/1573/1580

16

AUTHOR: Dubinin, M. M.; Zhdanov, S. P.; Zhukovskaya, Ye. G.; Murdmaa, K. O., Poistyanov, Ye. F. Sakavov, I. Ye., Shishakov, N. A.

TITLE: Investigation of the adsorption properties and the secondary porous structure of adsorbents functioning as molecular sieves. Communication 10. Composition, adsorption properties and limiting adsorption volume of type X synthetic zeolites

SOURCE: AN SSSR. Izv. Seriya khimicheskaya, no. 9, 1964, 1573-1580

TOPIC TAGS: type X zeolite, synthetic zeolite, adsorption porous structure, molecular sieve, isomorphic substitution, elementary cell parameter, adsorption isotherm

ABSTRACT: The effect of varying compositions of the aluminosilicate skeleton of type X synthetic zeolites on the volume of the major cavities and the adsorption properties of the zeolites was determined. In the type X zeolites the $SiO_2:Al_2O_3$ ratio (x) may be varied from 2.2 to 3.3 due to the isomorphic substitution of the

Card 1/3

L 16157-65
ACCESSION NR: AP4045794

Al ions by Si ions. The parameter of the cubic elementary crystal cell was determined from x-ray data; the radius of the structural unit corresponded to the relationship $r_x = 0.406 - 0.060(x-2.00)$, with x varied from 2.2 to 3.3. Thus the volume of the major cavity decreased as the zeolite was enriched in Si, but the number of elementary cells per unit mass of dehydrated zeolite increased. The volume of the major cavities per unit mass of crystals was practically independent [illegible] limiting adsorption volumes for NaX zeolites were determined for water, benzene, n-pentane, cyclohexane and [illegible] at 20 C and for nitrogen at -196 C. The limiting adsorp- [illegible] independent of the [illegible] substitution of [illegible] alumosilicate skeleton. "The authors thank Ye. N. Yegorov for chemical analysis of the zeolites, B. A. [illegible] for supplying zeolite samples and L. G. Ul'ko for

Card 2/3

L 16157-65

ACCESSION NR: AP4045794

2

conducting individual tests. Orig. art. has: 6 tables, 2 figures and 4 equations.

ASSOCIATION: Institut fizicheskoy khimii Akademii nauk SSSR (Institute of Physical Chemistry, Academy of Sciences SSSR); Institut khimii silikatov Akademii nauk SSSR (Institute of Silicate Chemistry Academy of Sciences SSSR)

SUBMITTED: 29Dec62 ENCL: 00

SUB CODE: GC, GP NO REF SOV: 006 OTHER: 000

Card 3/3

DUBININ, M. M.; ZHUKOVSKAYA, Ye. G.; MURDMAA, K. O.; POLSTYANOV, Ye. F.

Adsorption properties and the secondary porous structure of adsorbents having molecular-sieve action. Report No. 7: Volumes of the cavities of dehydrated crystals of synthetic zeolites of the types A and X filled up during absorption of the vapors of various substances. Izv. AN SSSR Otd. khim. nauk no.12:2113-2121 D '62. (MIRA 16:1)

1. Institut fizicheskoy khimii AN SSSR.

(Zeolites) (Adsorption)

DUBININ, M.M.; ZHUKOVSKAYA, Ye.G.; MURDMAA, K.O. (Moscow)

Specific surface area of fine-pore absorbents. Part 2: Inapplicability of the adsorption methods for evaluating the specific surface area of fine-pore adsorbents. Zhur.fiz. khim. 37 no.2:426-432 F '63. (MIRA 16:5)

1. Institut fizicheskoy khimii AN SSSR.
(Zeolites) (Adsorption)

45147

5.1105

S/076/63/037/002/013/018
B144/B180

AUTHORS: Dubinin, M. M., Zhukovskaya, Ye. G., Murdmaa, K. O. (Moscow)

TITLE: Specific surface area of finely-porous adsorbents. II. Uselessness of adsorption methods for determining the specific surface area of finely-porous adsorbents

PERIODICAL: Zhurnal fizicheskoy khimii, v. 37, no. 2, 1963, 426-432

TEXT: Based on previous work (Zh. fiz. khimii, 36, 1806, 1962) the adsorption isotherms on fully dehydrated synthetic CaA, NaX and CaX zeolite crystals were determined for nitrogen vapors at -195°C and for water at 20°C. The specific surface area values derived from the BET and Langmuir adsorption isotherm equations were similar. The specific surface areas were also calculated from the formulas $S = a_m N \omega$, where a_m is the capacity of the monolayer and N the Avogadro number, and $\omega = 4 \cdot 0.866 (M/4\sqrt{2}N\rho)^{2/3}$, where M is the molecular weight and ρ the volume density of the liquid phase. ω was 16.2 Å for nitrogen and 10.3 Å

Card 1/2

Specific surface area of ...

S/076/63/037/002/013/018
B144/B180

for water. The experimental surface areas did not differ much for nitrogen and water, but those obtained from the x-ray data by formal calculation were about 50% higher. These differences are not due to the application of the BET equation in the special forms where n is 1 or ∞, but to the fact that neither the BET nor the Langmuir equation permit an estimate of adsorption, other than that based on the occupied volume of the zeolite pores. It is emphasized that the specific surface area concept is neither necessary nor desirable for finely-porous adsorbents such as zeolites, activated carbon, etc. There are 6 figures and 3 tables.

ASSOCIATION: Institut fizicheskoy khimii Akademii nauk SSSR (Institute of Physical Chemistry of the Academy of Sciences USSR)

SUBMITTED: December 29, 1961

Card 2/2

DUBININ, M.M.; ZHUKOVSKAYA, Ye.G.; MURDMAA, K.O.

Adsorption properties and secondary porous structure of adsorbents having molecular sieve effect. Report No.6: Adsorption of nitrogen and water vapors on X-type zeolites, and the potential theory of adsorption. Izv.AN SSSR.Otd.khim.nauk no.6: 960-968 '62. (MIRA 15:8)

1. Institut fizicheskoy khimii AN SSSR.
(Nitrogen) (Adsorption) (Zeolites)

DUBININ, M.M.; ZHUKOVSKAYA, Ye.G.

Konstantin Vasil'evich Chmutov; on his 60th birthday. Zhur. fiz. khim. 36 no.4:923-924 Ap '62. (MIRA 15:6)
(Chmutov, Konstantin Vasil'evich, 1902-)

DUBININ, M.M.; ZHUKOVSKAYA, Ye.G.; MURDMAA, K.O.

Adsorption properties and secondary porous structure of adsorbents having molecular sieve effect. Report No.5: Maximum adsorption volumes of dehydrated crystals of type X synthetic zeolites. Izv. AN SSSR. Otd.khim.nauk no.5:760-769 My '62. (MIRA 15:6)

1. Institut fizicheskoy khimii AN SSSR.
(Zeolites)

DUBININ, M.M., akademik, otv. red.; SERPINSKIY, V.V., doktor khim. nauk; ZHUKOVSKAYA, Ye.G., red.; GOLUB', S.P., tekhn. red.

[Synthetic zeolites; preparation, investigation, and uses] Sinteticheskie tseolity; poluchenie, issledovanie i primenenie. Moskva, Izd-vo Akad. nauk SSSR, 1962. 286 p. (MIRA 15:10)

1. Akademiya nauk SSSR. Otdeleniye khimicheskikh nauk. Komissiya po tseolitam.

(Zeolites)

S/062/62/000/012/001/007
B101/B186

AUTHORS: Dubinin, M. M., Zhukovskaya, Ye. G., Murdmaa, K. O., and Polstyanov, Ye. F.

TITLE: Study on adsorption properties and secondary pore structures of adsorbents with a molecular sieve effect. Communication VII. Volumes of the cavities of dehydrated crystals of synthetic A and X zeolites, which are filled by vapor adsorption of various substances

PERIODICAL: Akademiya nauk SSSR. Izvestiya. Otdeleniye khimicheskikh nauk, no. 12, 1962, 2113-2121

TEXT: The isothermal lines of the sorption of water at 20°C, nitrogen at -195°C, and benzene at 20°C were plotted for NaA, CaA, NaX, and CaX zeolites to determine the characteristic adsorption values. The adsorption volumes were determined: (1) by calculation from the isothermal equation (Izv. AN SSSR, Otd. khim. n., 1958, 1165), developed on the basis of the potential theory of adsorption; (2) by determining graphically the characteristic equilibrium pressure h_0 for each vapor before capillary

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B101/B186

Study on adsorption properties and ...

condensation sets in. The values (v^o) obtained in two different ways were consistent (in cm^3/g): with H_2O at 20°C 0.269 - 0.272 for NaA, 0.279-0.283 for CaA, 0.323 - 0.338 for NaX, 0.355 - 0.360 for CaX; with N_2 at -195°C 0.287 for CaA, 0.336 - 0.340 for NaX, 0.349 - 0.350 for CaX, and with C_6H_6 at 20°C 0.293 - 0.297 for NaX, and 0.300 - 0.301 for CaX. Calculation of the number n of unit cells with the composition $z[yNa_2O\cdot(1-y)H_2O\cdot Al_2O_3\cdot xSiO_2]$ and the molecular weight M per unit weight of the zeolite crystal gave: for NaA: $x = 2.06$, $y = 0.93$, $z = 5.91$, $M = 1683$, $n\cdot 10^{-20}/g = 3.58$; for CaA: $x = 2.06$, $y = 0.93$, $z = 5.91$, $M = 1654$, $n\cdot 10^{-20}/g = 3.64$; for NaX: $x = 2.96$, $y = 0.964$, $z = 38.71$, $M = 13171$, $n\cdot 10^{-20}/g = 0.457$; for CaX: $x = 2.96$, $y = 0.964$, $z = 38.71$, $M = 12950$, $n\cdot 10^{-20}/g = 0.465$. The volume of the cavities filled during maximum adsorption, calculated from $v_c = v^o/n$, has the following values:

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S/062/62/000/006/001/008
B117/B101

AUTHORS: Dubinin, M. M., Zhukovskaya, Ye. G., and Murdmaa, K. O.

TITLE: Study of adsorption properties and secondary pore structure of adsorbents with molecular screen effect. Communication 6. Adsorption of nitrogen and water vapors on X-type zeolites, and the potential theory of adsorption

PERIODICAL: Akademiya nauk SSSR. Izvestiya. Otdeleniye khimicheskikh nauk, no. 6, 1962, 960 - 968

TEXT: Adsorption isotherms of nitrogen vapor (at -195°C) and water vapor (at 20°C) on dehydrated X type zeolites, in sodium and calcium form, were studied at $1\cdot10^{-3}$ - $5\cdot10^{-1}$ mm Hg. Discussion of the results is based of author's potential theory (Zh. fiz. khimii, 21, 1351 (1947); ibid. 23, 1129 (1949); Chem. Revs. 60, 235 (1960)). Results: (1) The X type zeolites belong to the first structural type (Dokl. AN SSSR, 131, 865 (1960)). Therefore, the equation for the adsorption isotherm developed for finely porous carbon adsorbents applies to it. (2) The limit volumes of the adsorption space practically correspond to the hollow space volumes of the

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zeolites as calculated on the basis of the X-ray structural analysis; according to the potential theory they are, therefore, one of the main characteristics of the structure of the adsorbent. (3) The millimole volumes (cm^3/mmole) of the adsorbed substances coincide well with the millimole volumes of its liquid phases. This supports the assumption that substances in the adsorbed state have the same density as in the liquid phase. (4) In case of water adsorption on X type zeolites electrostatic forces assist in increasing the affinity coefficient β to 1.65 (β = 0.76 for the nitrogen standard). There are 4 figures and 3 tables.

ASSOCIATION: Institut fizicheskoy khimii Akademii nauk SSSR (Institute of Physical Chemistry of the Academy of Sciences USSR)

SUBMITTED: December 27, 1961

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S/076/62/036/004/012/012
B105/B104

AUTHORS: Dubinin, M. M., and Zhukovskaya, Ye. G.

TITLE: Konstantin Vasil'yevich Chmutov. On the occasion of his 60th birthday

PERIODICAL: Zhurnal fizicheskoy khimii, v. 36, no. 4, 1962, 923 - 924

TEXT: K. V. Chmutov was 60 years old on March 21, 1962. He was born in Moscow and started his career in Bezhitsa at the zavod Krasnyy Profintern (Krasnyy Profintern Plant). In 1926, as a student of the Moskovskoye vyssheye tekhnicheskoy uchilishche (Moscow School of Higher Technical Education) K. V. Chmutov got interested in surface phenomena. Professor N. A. Shilov asked Chmutov to participate in his studies. K. V. Chmutov was teaching at the Moscow School of Higher Technical Education for more than 25 years. In 1940 he submitted a dissertation "Sorbtsionnyye yavleniya v kapillyarnykh sistemakh" (Sorption phenomena in capillary systems) for a doctor's degree. After a short time he became a professor. Jointly with M. M. Dubinin, he wrote the book "Fiziko-khimicheskiye

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Konstantin Vasil'yevich Chmutov. On ...

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osnovy protivogazovogo dela" (Physico-chemical fundamentals of gas defense). From 1943 to 1950 he was Head of the Kafedra kolloidnoy khimii (Department of the Chemistry of Colloids). He studied the diffusion kinetics, the temperature dependence of the diffusion coefficient in the system polymer-monomer and the growth of vanadium pentoxide particles. At the Institut fizicheskoy khimii AN SSSR (Institute of Physical Chemistry of AS USSR), a laboratoriya khromatografii (Laboratory for Chromatography) was established at the end of the forties and K. V. Chmutov was put in charge of it, as well as of the Komissiya po khromatografii (Commission for Chromatography) at the Otdeleniye khimicheskikh nauk AN SSSR (Department of Chemical Sciences AS USSR). In this laboratory, physico-chemical properties of the ion exchange of sorbents are studied, chromatographic processes simulated, and the requirements for producing chromatograms of nonequilibrium working conditions of the ion exchange column are investigated. In the field of producing spectrally pure salts, a new adsorption complex-forming method for the separation of metals may be introduced. The following monographs were published by K. V. Chmutov: "Tekhnika fiziko-khimicheskogo eksperimenta" (Technique of the Physico-chemical experiment), (3rd edition 1954);

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Konstantin Vasil'yevich Chmutov. On ...

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"Primeneniye elektronnykh priborov i skhem v fiziko-khimicheskom issledovanii" (Application of electronic devices and circuits in physico-chemical research) (1961); "Avtomaticheskiye pribory v kolonochnom khromatograficheskom analize" (Automatic instruments in column chromatographic analysis) (1961). K. V. Chmutov is a member of the Board of Editors as well as Deputy Chief Editor of the Zhurnal fizicheskoy khimii (Periodical for Physical Chemistry). In 1953, K. V. Chmutov was elected Corresponding Member of the AS USSR. There is 1 figure.

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DUBININ, M.M.; VISHNYAKOVA, M.M.; ZAVERINA, Ye.D. [deceased];
ZHUKOVSKAYA, Ye.G.; SARAKHOV, A.I.

Adsorption properties and secondary structure of adsorbents acting as molecular sieves. Report No.4: Granulated synthetic zeolites of type A. Izv. AN SSSR. Otd.khim.nauk no.8:1387-1395 Ag '61. (MIRA 14:8)

1. Institut fizicheskoy khimii AN SSSR.
(Zeolites)

DUBININ, M.M.; VISHNYAKOVA, M.M.; ZAVERINA, Ye.D.; ZHUKOVSKAYA, Ye.G.;
LEONT'YEV, Ye.A.; LUK'YANOVICH, V.M.; SARAKHOV, A.I.

Adsorption properties and secondary porous structure of adsorbents acting as molecular sieves. Report No.1: Industrial specimens of synthetic zeolites. Izv.AN SSSR Otd.khim.nauk no.3:396-406 Mr '61. (MIRA 14:4)

1. Institut fizicheskoy khimii Akademii nauk SSSR.
(Zeolites)

S/062/61/000/008/004/010
B117/B206

AUTHORS: Dubinin, M. M., Vishnyakova, M. M., Zaverina, Ye. D. (Deceased), Zhukovskaya, Ye. G., and Sarakhov, A. I.

TITLE: Investigation of the adsorption properties and secondary pore structures of adsorbents having the effect of microfilters. Communication 4. Granulated synthetic zeolites of the A-type

PERIODICAL: Akademiya nauk SSSR. Izvestiya. Otdeleniye khimicheskikh nauk, no. 8, 1961, 1387-1395

TEXT: The authors investigated the adsorption properties, the secondary pore structures of the grains and their apparent and gravimetric density. Granulated A-type zeolites obtained by Soviet scientists at the beginning of studies in the field of zeolite synthesis, were investigated. A number of specimens by Ya. V. Mirskiy (Mr) were used, during the production of which the pressure was repeatedly changed, and one specimen by B. A. Lipkind (Lp). The designation of the samples is composed of the abbreviated name of the producer and the specimen number given by him.

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Investigation of the adsorption...

Two specimens each of granulated zeolites by the American firm of Linde (I) and (II) in the form of grains with 1/8" diameter were used for comparison. To the sodium form (NaA) belonged: Mr-296, Lp-202-2, Linde 4A (I), Linde 4A (II). To the calcium form (CaA) belonged: Mr-297, Mr-347, Mr-372, Mr-380, Linde 5A (I) and Linde 5A (II). The isotherms of sorption and desorption of benzene vapors were determined by sorption scales in vacuum. The specific method for experiments with zeolites was previously described by M. M. Dubinin (Ref. 3: Izv. AN SSSR, Otd. khim. n., 1961, 750). The isotherms determined had generally the same character as those mentioned by the authors, Ye. A. Leont'yev and V. M. Luk'yanovich (Ref. 2: Izv. AN SSSR. Otd. khim. n., 1961, 396). Adsorption isotherms of water vapors were measured by sorption scales in vacuum for direct comparison of the adsorption properties of granulated, completely dehydrated zeolites. The secondary pore structure of the grains was investigated by pressing in mercury, and according to the sorption method. Mercury porometry makes it possible to determine the distribution of the pore volumina according to their effective radii in the range of $1 \cdot 10^6$ to 15-25 Å. From the isotherms of capillary condensation of vapors of substances, for which the pore structure of zeolite crystals (primary porosity) is inaccessible, sorption volumina or the summary pore volumina with effective radii below 100 Å might easily be found. From these data the total volume of the secondary pore structure may be calculated. In experiments with mercury, low- and high-pressure pore meters were used (Ref. 4: M. M. Dubinin, A. I. Sarakhov and G. A. Ryabikov, Zh. fiz. khimii 32, 1404, (1958); Ref. 5: M. M. Dubinin, M. M. Vishnyakova, Ye. G. Zhukovskaya, Ye. A. Leont'yev, V. M. Luk'yanovich, A. I. Sarakhov, Zh. fiz. khimii 34, 2019 (1960)). Zeolite grains which were in equilibrium with the air humidity were applied. The main characteristics of the secondary pore structure of zeolite grains are listed in Table 3. Table 4 contains information on the volume of the secondary pore structure. When applying zeolite grains in practice, it is not the adsorptive power of the unit of mass of the grains which is of vital importance, but the unit of volume of the grain layer. Therefore, the correlation must be established between adsorption properties as well as apparent density of the zeolite granules and the volume of their secondary pore structure. This problem may be solved if composition of zeolite grains and volume of the secondary pores are known from experimental data. The calculated and experimental characteristic features of A-type zeolite grains are compared with each other in Table 5. The values for the apparent grain density agree well in general. The deviations amount to a maximum of ±3%. The calculated and experimental maximum adsorption volume for water are similar for NaA grains. For most of the CaA grains of Soviet and American origin, the maximum adsorption volume are below the values calculated from the crystal content. A part of the highly disperse zeolite crystals, i.e. in CaA grains, is obviously excluded from the adsorption process for yet unclarified reasons. The latter are being investigated at present. The comparison of the granulated A-type zeolites synthetized by Soviet scientists with corresponding American specimens showed that with respect to their adsorption properties they are only identical at the surface of secondary pores. This concerns the accessibility of the pore structure of the actual zeolite crystals for the adsorbable molecules, as well as the adsorption of bigger molecules. The zeolite grains investigated show strongly differential volumina of the secondary pore structure. That is the main reason for the fact that the apparent and gravimetric density and thus the adsorption properties of granulated zeolites are different for the units of volume of the grain layers. The authors thank B. A. Lipkind

Investigation of the adsorption...

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and Ya. V. Mirskiy for supplying specimens and experimental data on apparent densities of the grains. There are 2 figures, 5 tables, and 7 references: 5 Soviet-bloc and 2 non-Soviet-bloc. The two references to English-language publications read as follows: D. W. Breck, W. G. Eversole, R. M. Milton, T. B. Read, T. L. Thomas, J. Amer. Chem. Soc. 78, 5963 (1956); R. M. Barrer, W. M. Meier, Trans. Faraday Soc. 54, 1072 (1958).

ASSOCIATION: Institut fizicheskoy khimii Akademii nauk SSSR (Institute of Physical Chemistry, AS USSR)

SUBMITTED: December 12, 1960

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S/062/61/000/003/002/013
B117/B208

AUTHORS: Dubinin, M. M., Vishnyakova, M. M., Zaverina, Ye. D., Zhukovskaya, Ye. G., Leont'yev, Ye. A., Luk'yanovich, V. M., and Sarakhov, A. I.

TITLE: Study of adsorption properties and structure of secondary pores of adsorbents having the effect of molecular sieves. Report 1. Industrial samples of synthetic zeolites

PERIODICAL: Izvestiya Akademii nauk SSSR. Otdeleniye khimicheskikh nauk, no. 3, 1961, 396-406

TEXT: The authors studied some peculiarities of the adsorption properties of typical industrial samples of synthetic zeolites and the structure of their secondary pores. They used industrial samples from molecular sieves designed by Linde 4A (designated by MC-4A (MS-4A)), and 5A (designated by MC-5A (MS-5A)) in the form of 4-8 mm long grains with an average diameter of ~3.2 mm. Sorption isotherms and, in some cases, desorption isotherms of nitrogen vapors at -195°C, and water, benzene, and cyclohexane vapors at 20°C were determined. A similar apparatus as that described in Ref. 2

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(B. P. Bering, M. M. Dubinin, Ye. G. Zhukovskaya, A. I. Sarakhov, and V. V. Serpinskiy, Zh. fiz. khimii 31, 712, 1957) was applied. To study the structure of secondary pores of MS-4A and MS-5A grains, low- and high-pressure porosimeters were used. The latter was a redesigned device of the ПА-4 (PA-4) type (Ref. 5: T. G. Plachenov, V. A. Aleksandrov, and G. M. Belotserkovskiy, Metody issledovaniya struktury vysoko-dispersnykh i poristykh tel, Izd. AN SSSR, M., 1953, str. 59). For the electron-microscopic examination of the structure of secondary pores, the method of single-stage carbon replicas was used. The pictures of carbon replicas of MS-4A and MS-5A taken by means of an УЭМ-100 (UEM-100) electron microscope showed no marked differences. A thorough analysis of stereophotographs indicates that there was no dense packing of the zeolite crystals in the grains. There are interstices of the order of magnitude of small crystals, i.e., some tenths of a micron or some thousandths of an angstrom. Strong enlargements show that the crystal surface is not amorphous. The studies of MS-4A and MS-5A disclosed that the potential adsorption theory could be applied to them. As the authors had not obtained any experimental data, they used the results obtained by N. V. Kel'tsev, for water vapor at 20° and 80°C and at equilibrium pressures p = 1 and 25 mm Hg, which had been

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made available to them. The measured values of adsorption deviate from the calculated values by 3 % at most. Eq. (1) expresses the temperature dependence of the adsorption isotherms satisfactorily:

$$(1) \qquad a = (W_0/v) \exp\left[-B \frac{T^2}{\beta^2} (\log p_s/p)^2\right]$$

W_0 = limiting volume of the adsorption space, which is equal to the volume of the micropores of the adsorbent; B = constant dependent on the dimensions of the micropores, which determine the increase of the adsorption potentials; β = affinity factor of the characteristic lines; v = volume of 1 mM of the vapor liquefied at the experimental temperature T. When considering the structure of the secondary pores, it was found that it may be quantitatively described by the sorption and mercury methods of measuring the pores. The characteristics obtained for the pore structure of MS-4A and MS-5A are given in Table 4. There are 9 figures, 7 tables, and 13 references: 12 Soviet-bloc and 1 non-Soviet-bloc.

ASSOCIATION: Institut fizicheskoy khimii Akademii nauk SSSR (Institute of Physical Chemistry, Academy of Sciences USSR)

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DUBININ, M.M.; VISHNYAKOVA, M.M.; ZHUKOVSKAYA, Ye.G.; LEONT'YEV, Ye.A.;
LUK'YANOVICH, V.M.; SARAKHOV, A.I.

Study of the porous structure of solids by sorption methods.
Part 5: Use of different methods in the study of the structure of
the intermediate pores and macropores of activated carbons.
Zhur.fiz.khim. 34 no.9:2019-2029 S '60. (MIRA 13:9)

1. Akademiya nauk SSSR, Institut fizicheskoy khimii.
(Carbon, Activated)